UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,691	08/02/2001	Lawrence Haydock	9513	6479

7590 05/30/2002

Gary M. Gron
Cummins Inc.
500 Jackson Street, M/C 60701
Columbus, IN 47201

EXAMINER
LE, DANG D

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 05/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,691	HAYDOCK ET AL.	
	Examiner	Art Unit	
	Dang D Le	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-46* is/are pending in the application.

4a) Of the above claim(s) *45 and 46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *09/147,056* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Claims 45 and 46 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group II, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Specification

2. The abstract of the disclosure is objected to because it contains the word "comprises" in line 1. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

- Page 2, delete from line 11 to line 14.
- Page 2a, delete from line 9 to line 11.
- Page 3, delete from line 1 to line 3.
- Page 4, delete from line 5 to line 9.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 36-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 36-39, it is not clear what the following elements are in the claims: "axially oriented member", "elongate back portion", and "integral prongs" in claim 36; "intervening spaces and mouths" in claim 37; "elongate flexible rod member", "a strap portion", and "bundles of conductors" in claim 39.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of Srdoch.

Regarding claim 32, King shows an alternating current machine (Figure 1) comprising:

- A rotor (83) journaled for rotation within a stator (31);
- Terminal means (35) at an end (right front) of the stator;
- Stator windings (45) comprising a plurality of one piece electrically conductive wires which are gathered together into an annular array at said end of the stator, the stator windings having terminal leads (49) which are guided around respective paths and coupled to terminal means (35), each at locations which are spaced circumferentially from one another with respect to the stator; a plurality of supporting and guiding means (grooves 73 on plate 69) at said end of the stator which support and guide said terminal leads around said

paths, the supporting and guiding means (grooves 73) being spaced from one another circumferentially such that said terminal leads supported and guided thereby extend between in free space and ventilation gaps are formed between adjacent terminal leads and supporting and guiding means whereby cooling of the terminal leads is enhanced by air flow through those ventilation gaps.

King does not show the terminal leads (49) which are guided around respective circumferentially extending paths , each at locations which are spaced axially from one another with respect to the stator.

Srdoch shows the terminal leads (22) which are guided around respective circumferentially extending paths (Figure 2), each at locations which are spaced axially (from left to right in Figure 2) from one another with respect to the stator for the purpose of reducing heat.

Since King and Srdoch are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to guide the terminal leads around respective circumferentially extending paths , each at locations which are spaced axially from one another with respect to the stator as taught by Srdoch for the purpose discussed above.

Regarding claim 33, it is noted that King also shows each stator winding terminal lead being an integral continuation of a conductor which forms a respective stator winding.

Regarding claim 34, it is noted that King also shows the stator winding terminal leads that comprise the ends of a respective stator winding being led together for connection to respective terminals of a terminal block (35) from a location which is in a common notional plane that is normal to the axis of rotation of the rotor within the stator.

Regarding claim 35, it is noted that King also shows each of the supporting and guiding means (grooves 73) of said array comprises an axially orientated member which is formed of electrically insulating plastics material (69 being an insulator) and which is operable to guide said terminal leads side by side along the respective paths between the adjacent members of the array.

Regarding claim 36, it is noted that King also shows each axially orientated member comprising an elongate back portion with integral prongs (between grooves 73) which project laterally therefrom so that it has the form of a comb, the prongs projecting outwardly with respect to the axis of the stator and serving as spacers which space juxtaposed ones of the terminal leads apart and react electromagnetic forces which act to urge towards them either of the terminal leads they separate.

Regarding claim 37, it is noted that King also shows juxtaposed prongs have nearer sides and ends which form intervening spaces and mouths therebetween and the prongs are shaped so that the nearer sides of juxtaposed prongs converge towards the ends of the prongs remote from the back portion, the mouths formed between those ends of juxtaposed pairs of the prongs being sized such that a terminal lead can be fitted into the intervening spaces between each juxtaposed pair of prongs with a snap action.

Regarding claim 38, it is noted that King also shows means (71) fitted to the ends of the prongs of each of said axially orientated members for bracing the leads into the space between adjacent prongs.

Regarding claim 39, it is noted that King also shows said means (71) which are operable to brace the leads into each axially orientated member are part of an elongate flexible rod member which, in addition to functioning to brace the leads into the respective axially orientated member, also comprises a strap portion which is passed under the back portion of the respective axially orientated member, remote a from the prongs, and under bundles of conductors that comprise portions of the stator windings that have been turned around at said end of the stator, whereby the respective axially orientated member is strapped to the stator windings by the strap portion.

8. Claims 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of Srdoch as applied to claim 32 above and further in view of Brkic et al. (Deutsches 2949645).

Regarding claim 40, the machine of King modified by Srdoch includes all of the limitations of the claimed invention except for the rotor being coupled with a fan for conjoint rotation, the fan being within a casing and being operable to cause air flow through the stator from said one end, that air flow being drawn into the stator through the ventilation gaps formed between juxtaposed terminal leads and adjacent supporting and guiding means at said one end of the stator, the casing cooperating with the fan to provide a conduit for discharge air flow from the fan.

Brkic et al. show the rotor (Figure 1) being coupled with a fan (10) for conjoint rotation, the fan being within a casing (6) and being operable to cause air flow through the stator from said one end, that air flow being drawn into the stator through the ventilation gaps formed between juxtaposed terminal leads and adjacent supporting and guiding means at said one end of the stator, the casing cooperating with the fan to provide a conduit for discharge air flow from the fan for the purpose of reducing heat.

Since King, Srdoch and Brkic et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to couple the rotor with a fan for conjoint rotation, the fan being within a casing and being operable to cause air flow through the stator from said one end, that air flow being drawn into the stator through the ventilation gaps formed between juxtaposed terminal leads and adjacent supporting and guiding means at said one end of the stator, the casing cooperating with the fan to provide a conduit for discharge air flow from the fan as taught by Brkic et al. for the purpose discussed above.

Regarding claim 41, it is noted that Brkic et al. also show the conduit being in the form of a volute whereby the area of said volute increases progressively in the downstream direction (Figure 2).

Regarding claim 42, it is noted that Brkic et al. also show there being two sets of conduits diametrically opposed one with respect to the other and oriented to discharge in opposite directions.

Regarding claim 43, it is noted that Brkic et al. also show the fan being a radial flow fan which has a hub (1) and blades (2) which project from the hub at an angle which is oblique to a notional direction which is radial with respect to the hub whereby those blades trail the notional radial direction.

9. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of Srdoch and Brkic et al. as applied to claim 41 above and further in view of Tanaka et al. (4,859,886).

Regarding claim 44, the machine of King modified by Srdoch and Brkic et al. includes all of the limitations of the claimed invention except for the fan having an axis of rotation and each blade has a tip which is angled with respect to the axis of rotation of the fan whereby the tip of each blade diverges from a wall of the casing that surrounds it.

Tanaka et al. show the fan having an axis of rotation and each blade has a tip which is angled with respect to the axis of rotation of the fan whereby the tip of each blade diverges from a wall of the casing that surrounds it (Figure 7b) for the purpose of directing the air flow

Since King, Srdoch, Brkic et al. and Tanaka et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the fan with an axis of rotation and each blade with a tip which is angled with respect to the axis of rotation of the fan whereby the tip of each blade diverges from a wall of the casing that surrounds it as taught by Tanaka et al. for the purpose discussed above.

Information on How to Contact USPTO

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
May 28, 2002